



StopWaste is the Alameda County Waste Management Authority, the Alameda County Source Reduction and Recycling Board, and the Energy Council operating as one public agency.

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May 21, 2014

Laura Peters

Senior Engineer, Water Resources

California Department of Water Resources

Re: StopWaste's Comments on the Water-Energy Grant Program Criteria

Dear Ms. Peters:

Thank you for the opportunity to submit comments on the Water-Energy Grant Program selection criteria. StopWaste is the Alameda County Waste Management Authority, Alameda County Source Reduction and Recycling Board, and the Energy Council operating as one public agency. For over a decade, our agency has been working at the nexus of waste-water-energy issues. Based on our depth of experience with developing and managing successful programs in this arena, we recommend the following:

1. **To encourage regional projects, do not set a maximum grant amount.** At the Public Scoping Meeting, DWR staff indicated a likely preference for regional projects. We agree that integrated regional approaches have tremendous potential to maximize water, energy and greenhouse gas benefits. However, truly regional projects typically require a greater investment than projects with a more limited scope. We recommend that the Water-Energy Grant Program not set a funding cap. DWR's guidelines should encourage projects with the greatest potential to deliver cost-effective water, energy and GHG savings, regardless of project size.
2. **To improve on business-as-usual results, prioritize innovative and holistic approaches.** The grant program should encourage innovative solutions, not just conventional ideas. While basic rebates for water and energy conservation still have a role to play in helping California meet its GHG, water and energy goals, DWR should also encourage more innovative and holistic financing and market transformation mechanisms. Holistic programs that aim to change long-term behavior can deliver the immediate GHG, water and energy benefits while also providing a host of related benefits including water and air quality improvement, stormwater management and flood control, pollution prevention and waste reduction, creation of habitat for wildlife, and much more. We urge DWR to give preference to holistic projects that provide integrated, long-term benefits to California.
3. **To create lasting change, give preference to self-sustaining approaches.** The adage "Give a person a fish, she'll eat for a day. Teach her how to fish, and she'll eat for a lifetime," is highly relevant to the Water-Energy Grant Program. Public funds have been used to subsidize quick fixes such as upgrading an irrigation system. A complementary and ultimately more sustainable approach is to use public funds to

shift cultural attitudes about what constitutes a desirable landscape and to teach new practices, such as using sheet mulch to convert lawns to drought resilient, climate adaptive landscapes. In addition, energy and water conservation upgrades can be incentivized with on-bill financing programs. The one-time setup costs of on-bill financing programs can be partly offset by initial grant funding. Once established, this type of program is financially self-sustaining, unlike rebate programs that require continual refunding from taxpayer or ratepayer monies.

4. **To maximize GHG benefits, account for emissions reduction from additional sources.** At the Public Scoping Meeting, DWR staff said that projects must reduce greenhouse gas emissions, energy use and water use. The Guidelines should acknowledge GHG reduction methods beyond energy and water conservation and give appropriate credit to projects that can demonstrate GHG benefits via other means, such as sustainable landscaping. For example, amending soil with 1 inch of compost—a fundamental practice promoted by Bay-Friendly Landscaping and other sustainable landscape standards—reduces GHGs by 52.4 MTCO₂E per acre (please see the attachment, which provides data on the GHG benefits of using compost).
5. **To foster rapid implementation and ensure “skin in the game,” require match funds.** The Water-Energy Grant Program should require match funds, and should allow match funds for one year in arrears of the date of appropriation (effectively March 1, 2013). This would facilitate rapid project implementation by appropriately counting existing resources as part of the match requirement. Private/third-party investment facilitated by a project should also be eligible as part of any match requirement.

Thank you for your consideration and for your commitment to soliciting public input.

Sincerely,



Karen Kho
Senior Project Manager
StopWaste

Attachment to StopWaste's Comments on the Water-Energy Grant Program Criteria

GHG BENEFITS OF USING COMPOST AS PART OF A SUSTAINABLE APPROACH TO LANDSCAPING

StopWaste has pioneered resources and programs to encourage property owners and landscape professionals to use sheet mulching to replace water-thirsty lawns with climate adaptive, low-water landscapes. Typical lawn removals rely on using herbicides to kill the grass, landfilling of existing sod, or both. Sheet mulching is a simple yet powerful alternative that involves smothering the lawn in place with layers of compost, recycled paper and mulch. New drought-tolerant landscaping is planted directly into the sheet mulch. The recycled paper and existing sod biodegrade over time, providing nutrients to the plants and improving soil health, while the top of layer of mulch keeps the soil cooler, reduces evaporation, and helps manage weeds without toxic chemicals. The result is a landscape that produces immediate and ongoing GHG and water savings and that can thrive with little added water, even during cycles of exceptional drought.

The benefits of sheet mulching and compost use deserve to be more widely recognized by agencies charged with meeting California's climate and water goals. **Lawn-to-sustainable-landscape conversion using sheet mulching can reduce greenhouse gas emissions by 53 MTCO₂E per acre by:**

- Adding compost to the soil, which produces multiple greenhouse gas benefits (see below).
- Decreasing irrigation water by 50 to 90%, which has associated energy and GHG benefits.
- Eliminating mowing, which reduces combustion engine emissions.

The majority of these savings (52.4 MTCO₂E) derive from using compost. A 2011 study by Dave Edwards of the California Air Resources Board quantified compost's greenhouse gas benefits due to "decreased fertilizer use, decreased water use, decreased soil erosion, and decreased herbicide use."¹ Edwards calculated a Compost Emissions Reduction Factor (CERF) of 0.42 MTCO₂E/ton of feedstock. StopWaste staff worked with Edwards to convert the benefit from feedstock to compost application, determining that applying 1 inch of compost to the soil is equivalent to a 52.4 MTCO₂E per acre reduction. With the additional benefits of water conservation and reduced mowing, a lawn that's converted to sustainable landscaping using sheet mulch yields a total emissions reduction of 53 MTCO₂E per acre.

¹ California Air Resources Board, "Method for Estimating Greenhouse Gas Emission Reductions from Compost from Commercial Organic Waste," November 14, 2011, http://www.arb.ca.gov/cc/protocols/localgov/pubs/compost_method.pdf

Dr. Sally Brown, professor at the University of Washington, has also developed compelling data on the benefits of using compost to improve urban soils, which tend to be depleted in organic matter and have increased risk of runoff. Compost use addresses both of these problems, while also sequestering carbon in the soil. In four studies conducted in western Washington that lasted 7 to 15 years, Brown found that adding compost to the soil increased carbon in the soil ranging from 2 to 20 Mg/ha.

Using compost likely has additional GHG benefits not included in the 53 MTCO₂E per acre reduction described above. For example, a study conducted on rangelands by Delounge, Ryals, and Silver² found tremendous benefit with a one-time application of a half inch of compost to the surface of the soil. Range grasses grew faster, using photosynthesis to convert atmospheric carbon into organic matter, which is mostly stored in the plants' roots. Since much of the grass biomass is underground, even if the grasses die, the carbon typically bonds with the soil and can be trapped for centuries. The study's authors estimate that **"a ½ inch of compost application on 25% of CA rangelands can result in 337 million metric tons of carbon sequestered in rangelands – an amount equal to 75% of all annual carbon emissions in California."**

Compost has long been promoted as a way to improve plant health; the studies cited above point to the need for more widespread recognition of the equally important role of compost in carbon sequestration and greenhouse gas emissions reductions.

² Their study has resulted in the Marin Carbon project (<http://www.marincarbonproject.org/>); their scientific article is here: <http://link.springer.com/article/10.1007%2Fs10021-013-9660-5/fulltext.html>; and article for a general audience is here: <http://baynature.org/articles/the-grass-really-is-greener/>; and a paper prepared for CARB based on this study is here: http://nicholasinstitute.duke.edu/sites/default/files/w_silver_et_al_april_3013_carb.pdf.